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| **Stage 1: Desired Results** | | | | |
| **Unit: Body Systems** | | | | |
| **Standard 5.3 Life Science:**  Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics. | | | | |
| **Strand A. Organization and Development:** Living organisms are composed of cellular units (structures) that carry out functions required for life. Cellular units are composed of molecules, which also carry out biological functions. | | | | |
| **Enduring Understanding(s):**  **Students will understand that …**  Living organisms have a variety of observable features that enable them to obtain food and reproduce. | | | | **Essential Questions:**  What do all living things have in common? |
| **Students will know…** | | | **CPI** | **Students will be able to…** |
| Essential functions of the human body are carried out by specialized systems (Digestive, Circulatory, Respiratory, Nervous, Skeletal, Muscular, Reproductive). | | | **5.3.4.A.3** | Describe the interactions of systems involved in carrying out everyday life activities. |
| **Stage 2: Assessment Evidence** | | | | |
| **Performance Task(s):** | | **Other Evidence:** | | |
| Performance task will be teacher generated.  Transparency overlay? | | ***To show evidence of meeting this CPI, students may complete the following performance assessment:***  Because you are excellent at (riding a bike, playing a musical instrument, swimming, running, drawing, dancing, playing basketball, writing stories, etc.) you have been asked to create a how-to video for other students your age. This how-to video will be different from others. It will include a step-by-step explanation of all the human body systems involved in the action. Explain in detail to your viewers how the human body allows you to complete the activity.  **Resources**   * Teachers’ Domain provides lesson plans and other multimedia resources (video clips and simulations) that support this CPI.   <http://www.teachersdomain.org/resource/lsps07.sci.life.stru.bodysystems/>   * Body Systems for Kids has many links to teach each system separately. Fast facts are great!   <http://www.kidskonnect.com/subject-index/31-health/337-human-body.html> | | |
| **Stage 3: Learning Plan** | | | | |
| **Suggested Learning Activities:** | | | | |
| **5.3.4.A.3**  [Study Jams: Human Body](http://studyjams.scholastic.com/studyjams/jams/science/human-body/human-body.htm) | |  | | --- | | **Access Prior Knowledge** |   Divide students into groups. Provide large pieces of paper with an outline of a human body. Have groups label as many bones, muscles, and organs as they can on their outline.  Read The Magic School Bus: Inside the Human Body by Johanna Cole | | | |
| **5.3.4.A.3**  **What are the skeletal and muscular systems?**   * The student knows that complex animals have specialized organs to carry out life processes. * The student knows that living things are composed of cells * The student knows the major organ   systems of the human body.  **Materials**:  [Study Jams: Skeletal System](http://studyjams.scholastic.com/studyjams/jams/science/human-body/skeletal-system.htm)  [Study Jams: Muscular System](http://studyjams.scholastic.com/studyjams/jams/science/human-body/muscular-system.htm)  SF p 142-147  WorkBook p46, 46A  Quick Study p34-35  Great Body Shop  Note taking Guide | * Discuss: What is a skeleton. Show Transparency 17 and decide what our bodies would look like without bones, and without muscles. Read and complete note taking guide. Venn diagram? Graphic organizer? * Voluntary and Involuntary muscles: Anticipation Guide workbook page 46   Study Skills and Understanding: Remind students that reading for context is important to determine the meaning of a word.  **Assessment**: How are organs and tissues alike and different? Why are organs important to living things? *How does voluntary muscle movement differ from involuntary muscle movement? How do skeletal muscles allow your body to move? Tell about the functions of the skeletal system and the muscular system. Explain how they depend on one another.*  **Interactive Notebook**: Create metaphors for tissue and organ; comparing to the skeletal and muscular system.  Discuss meanings of the word *tissue*. "A group of similar cells that work together" or "a type of thin paper") Have students find an alternate meaning for the term *organ.* ("A type of musical instrument with pipes and a keyboard" Compare tissues to the parts of an in-line skate: the wheels, brake, shoe, and fasteners. Separately, the parts are like the body’s tissues; together, the different parts are similar in function to a body organ.  **Interactive Notebook**: *Write a letter to persuade kindergarten children to drink milk and consume other good sources of calcium. Include health benefits of calcium.*  **Homework**: Quick Study p34-35 | | | |
| **5.3.4.A.3**  **What are the respiratory and circulatory systems?**   * The student knows the major organ systems of the human   body.   * The student understands the functions of various body systems. * The student knows that processes needed for life are carried out by the cells   **Materials:**  Transparency 18 Carnation  [Oradell interactive learning](http://www.oradell.k12.nj.us/gradepages/Fourth/4.science.htm#whales)  [Study jams: Circulatory System](http://studyjams.scholastic.com/studyjams/jams/science/human-body/circulatory-system.htm)  [Stuy jams: Respiratory System](http://studyjams.scholastic.com/studyjams/jams/science/human-body/respiratory-system.htm)  Content Transparency Lungs  Content Transparency Heart  Quick Study p 36-37  Using Science Pictures: wkbk p 189 Lungs  Text page 148-151  Workbook pg. 47-47A | Flow chart?  Transparency 18 Carnation and food coloring demonstrating circulation through a flower.  [Respiration Station](http://www.kineticcity.com/controlcar/activity.php?act=2&virus=nastro) students follow the path through the lungs by acting out activities which heighten breathing.  [Heart on Kids Health](http://kidshealth.org/kid/htbw/heart.html) Information with audio backup  **Assessment:**  How does oxygen get from the lungs to the body cells? What path does oxygen follow after it enters the body? What would happen if the diaphragm were paralyzed? What is the job of the circulatory system? What is the main difference between arteries and veins? *Why is the heart an important connection between the respiratory and circulatory systems?*  **Interactive Notebook**:  Board game showing the path of oxygen to the lungs, or the path of blood to the heart?  Have students use the diagram of the heart to trace the path of blood to and from the lungs. Point out the chambers of the heart that have oxygen-rich blood and the chambers that have oxygen-poor blood.  Mneumonic Device: Review the words *atrium* and *ventricle.*Ask students to devise a memory devicethat helps them remember the functionsof each chamber of the heart.  **Homework**: Quick Study p 36-37 | | | |
| **5.3.4.A.3**  **What are the digestive and nervous systems?**   * The student knows that complex animals have specialized organs to carry out life processes. * The student knows the major organ systems of the human body. * The student understands the functions of various body systems.   **Materials:**  [**Study jams: Nervous system**](http://studyjams.scholastic.com/studyjams/jams/science/human-body/nervous-system.htm)  [**Study Jams: Digestive System**](http://studyjams.scholastic.com/studyjams/jams/science/human-body/digestive-system.htm)  Text page 152-155  Quick Study pg38-39  Transparency 19 Ball/ nervous system  Workbook pg 38-38A | Whisper down the lane..demonstrating the sending of messages  Throw a ball to a partner, why can you not ignore the ball, why do you at least put your hands up to block it?  [Label Digestive Organs](http://www.teach-nology.com/gold/new/sci/food2.html)  [digestion graphic organizer](http://www.teach-nology.com/gold/digest1.html)  Assessment:Which digestive organ absorbs liquid and stores solid waste What is a nerve made of? What is the path of food as it travels through the body? How are electrical signals from a pin prick on the finger received by the brain? Why is the central nervous system called the control center of your body? Are the muscles of the stomach voluntary or involuntary? How do you know?  Interactive Notebook:  Flowchart, Noticing where different systems work together. Is the stomach a muscular system or a digestive system organ?  More Metaphors: neural messages are like…  Write a story from the point of view of a nervous system message.  Homework: Quick Study pg38-39 | | | |
| **5.3.4.A.3**  **How does the body defend itself?**   * The student understands the functions of various body systems.   **Materials:**  [**Study jams: Immune System**](http://studyjams.scholastic.com/studyjams/jams/science/human-body/immune-system.htm)  Text Page 156-161  Workbook p 39-39A Transparency 20 Eye  Quick Study p40-41 | * Chart how different organs defend against microorganisms. Venn diagram to show how pathogens virus and bacteria are same and different.   **Assessment:** *Why are acids that are found in the stomach and sweat important?* How does a vaccine protect against disease? *How are bacteria and viruses the same? How are they different?*  **Interactive Notebook:**  Design Pictowords using vocabulary from lesson: infect, infection, pathogen, virus, bacteria, disease, contagious, vaccine  Illustrate a comic strip showing the battle between a pathogen and vaccine active in the body  **Homework:** Quick Study p40-41 | | | |
| **5.3.4.A.3**  **Guided Inquiry: How do diseases spread?**   * The student knows that a model of something is different from the real thing, but can be used to learn something about the real thing.   **Materials:**  Lab report  Flour  Carbon paper  Activity Book p 71-71A  Take home booklet: wkbk p 41-42  Text page 162-163 | * Guided Inquiry: Passing of Pathogens Simulation   Students work in groups of 4 and complete the lab report according to procedure. | | | |
| **Assessment: Unit Test**  Resources : Teacher’s Domain  All systems are go! | * Review chapter learning: use transparency layering to label as many parts of each system as possible Revisit your initial work with labeling organs. * Attached | | | |
| **Performance Task** | * Create digital or physical simulations to explain how human body systems work together to perform functions necessary for life. | | | |